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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. MISTY-52064

First Inventor or Application Identifier STEVEN M. UTTER

Title PORTABLE MIST COOLING DEVICE

Express Mail Label No. EL045596132US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ * Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☒ Specification [Total Pages 7]
(preferred arrangement set forth below)
 - Descriptive title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
3. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 1]
4. Oath or Declaration [Total Pages 1]
 - a. ☐ Newly executed (original or copy)
 - b. ☒ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 16 completed)
 - i. ☐ DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

* NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

ADDRESS TO:

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Box Patent Application
Washington, DC 20231

5. ☐ Microfiche Computer Program (Appendix)
6. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Copy
 - b. ☐ Paper Copy (identical to computer copy)
 - c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

7. ☐ Assignment Papers (cover sheet & document(s))
8. ☐ 37 C.F.R. § 3.73(b) Statement ☐ Power of Attorney (when there is an assignee)
9. ☐ English Translation Document (if applicable)
10. ☐ Information Disclosure Statement (IDS)/PTO-1449 ☐ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
13. ☐ * Small Entity Statement(s) ☒ Statement filed in prior application, Status still proper and desired (PTO/SB/09-12)
14. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
15. ☐ Other:

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No: 09 / 042,827

Prior application information: Examiner KEVIN WELDON Group / Art Unit: 3752

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

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Signature	<i>David G. Parkhurst</i>	Date	July 21, 1999

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VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY
STATUS (37) CFR 1.9(f) and 1.27(b) - INDEPENDENT INVENTOR

Applicant or Patentee: Steve Utter

Serial or Patent No.:

Filed or Issued:

For:

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the above-entitled invention described in:

☒ the specification filed herewith

☐ application serial no. _____, filed _____

☐ patent no. _____, issued _____

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed or licensed or am under an obligation, under contract or law to assign, grant, convey or license any rights in the invention is listed below:

☒ no such person, concern or organization

☐ persons, concerns or organizations listed below

*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27).

FULL NAME:

ADDRESS:

☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Inventor: Steven Utter

Signature: Steven Utter Date 10-17-94

A P P L I C A T I O N

Of

STEVEN M. UTTER

For

UNITED STATES LETTERS PATENT

On

PORTABLE MIST COOLING DEVICE

Attorneys

FULWIDER PATTON LEE & UTECHT, LLP
10877 Wilshire Boulevard, Tenth Floor
Los Angeles, CA 90024

Title: Portable Mist Cooling device

Background of the invention

This is a continuation in part of my previous copending application, serial number 07/927,231 filed on 08-07-92. The previous device introduced a fine mist into the dry air to lower ambient temperature. The previous device supplied the mist by means of a continuously pressurized tank.

The current invention delivers a fine mist spray to cool a localized area by evaporative cooling also, but with the following improvements:

The new device allows for the introduction of ICE or ice water allowing the device to work efficiently in humid environments through the process of conductive cooling as well as evaporative cooling in dry climates. The new device also incorporates a hand pump which allows the device to be filled in a remote location. According to the preferred embodiment of the device, the pressurizable tank may be of sufficient size and in acceptable packaging to make the entire apparatus portable by hand carrying, adapted to be worn in a back-pack or fanny pack configuration or be substantially free standing.

The only known portable spraying device for delivering humidity into a dry atmosphere is my previous invention. Other devices known in the spraying apparatus art are a variety of devices for directing and applying a spray of fluid to an object, such as crops, lawns, weeds, or fire. Generally, these devices may be broadly classified into two categories. The first group, consisting of motor driven sprayers, is represented by U.S. Patent Nos 3,421,697 issued to Marks on January 14, 1969, 3,539,110 issued to Kobayashi on November 10, 1970, 3,802,511 issued to Good, Jr. on April 9, 1974 and 4,651,903 issued to Pagliai on March 24, 1987. This first group of patents broadly discloses portable back-pack like sprayers however none discloses a fanny pack style that can be worn for hands

free operation. The second group, consisting of non-motor driven sprayers, is represented by U.S. Patent Nos. 2,911,157 issued to Converse on November 3, 1959, 3,352,364 issued to De Coste on November 14, 1967, 3,993,245 issued to Smith on November 23, 1976, and 4,688,643 issued to Carter et al on April 25, 1987. Of this second group, only patents issued to Coste and Smith disclose a sprayer having a pressurizable container and a spray nozzle. In the De Coste patent, the fluid in the container is directly pressurized by introduction of pressurized air through an air valve into the fluid container. Upon exhaustion of the air pressure within the container, the container must be re-pressurized from a pressurized air source. The Smith patent discloses a spraying device having a pressurizable container where a manual air-pump is used to pressurize the fluid the container. My previous invention discloses a pressurizable container but can be substantially improved by including a manual air pump to pressurize the fluid in the container.

Thus, an examination of the art, reveals that there is no known spray cooling apparatus for evaporatively cooling a localized area which employs a pressurizable container, a valve for activating a flow of pressurized fluid from the tank through a nozzle or a plurality of nozzles and a fanny pack style bag for wearing the device in a hands free operative style, and allowing for the introduction of ice cubes and or ice water.

Summary of the invention

Accordingly, it is a broad aspect of the present invention to provide a misting apparatus which utilizes a tank container such as that described in U.S. Patent No. 3,993,245 having a pressurizable container having a manual air-pump to pressurize the fluid within the container, a valve for activating the flow of pressurized fluid through a nozzle or plurality of nozzles.

Brief description of the figures.

Figure 1 is a perspective partial cross sectional view of the misting apparatus of the present invention.

Figure 2 is a partial cross sectional view of the pump and cap assembly.

Description of the preferred embodiments of the invention

With reference to the accompanying figures, in which like structural and functional features are identified by like reference numerals, there is disclosed the misting apparatus 100 of the present invention. With particular reference to fig. 1, misting apparatus 100 consists generally of a fluid tank 1, a flow valve 12 connected to a fluid outlet 20 of the tank, and a spray nozzle 10 connected to the flow valve 12 by a flexible or rigid tube 8.

Fluid tank 1 defines an inner fluid chamber 13 having a fluid outlet 14. A removable cap 200 in Fig. 2 allows for filling the inner chamber 13 with a fluid and a method for sealing the tank 1. A belt 2 is attached to the tank 1 or in another preferred embodiment the belt is attached to part of a bag housing the entire device. A buckle 3 connected to belt 2 secures the device around a person's waist. A clip 11 is secured around the tube and is of alligator clip style construction for attaching the device to a person's hat or other piece of clothing allowing for hands free operation of the apparatus.

With reference to figure 2, pump apparatus 200 is comprised of a threaded cap 20 which creates a seal with the pressurizable tank 1 of figure 1 when O-ring 18 is sandwiched between the two. A tubular cylinder 16 allows the passage of air from outside to the inner

chamber 13, Air enters the inner chamber 13 through one way valve 17. A cup seal 15 creates an air tight seal forcing air through tube 16. The cup seal 15 allows air to by pass itself on the up stroke refilling tube 16 with air. A shaft 21 is attached to the cup seal 15 and to pump handle 22 thereby allowing movement of the cup seal 15 when the pump handle 22 is moved.

It will be understood by those skilled in the art, that pressurization of inner chamber 13 creates a pressure differential that forces water out through inner-tube 9 and out through outer tube 8 and the spray nozzle when fluid valve 12 is opened.

In accordance with the broad aspects of the present invention, there has been disclosed and described, and hereinafter claimed, a misting apparatus adapted to deliver a spray of fluid and evaporatively cool and or conductively cool a localized area. While the invention has been particularly shown and described in reference to the preferred embodiments thereof, it will be understood by those skilled in the art that changes in form and details may be made without departing from the spirit and scope of the invention.

1 Claim:

- 1. A misting apparatus, which consists of a pressurizable fluid container in fluid communication with a valve for releasing a fluid, a spray nozzle for emitting a "mist" with a droplet size small enough to allow for evaporative cooling, and a pump for pressurizing the fluid within the container.**
- 2. The misting apparatus according to claim 1, wherein the entire device is in a fanny pack style bag to allow wearing of the device or uses a belt like strap without a bag for the same end result.**
- 3. The misting apparatus according to claim 1 wherein the device uses a flexible tube to deliver the mist so that a person can move only the tube and not the entire device to direct the flow of the mist.**
- 4. The misting apparatus according to claim 3 wherein a clip is used to attach the mist nozzle in such a way that the apparatus can be used in a hands free manner.**

Abstract

An apparatus for delivering a fine spray mist for evaporatively or conductively cooling a localized area. The apparatus consists of a pressurizable container, a valve for activating the release of fluid from the container, a spray nozzle or a plurality of spray nozzles coupled to the valve, a pump for pressurizing the container, a belt for securing the device to a person, and a clip for attaching the mist nozzle in such a fashion that it directs the flow of mist in a hands free manner.

FIG. 1

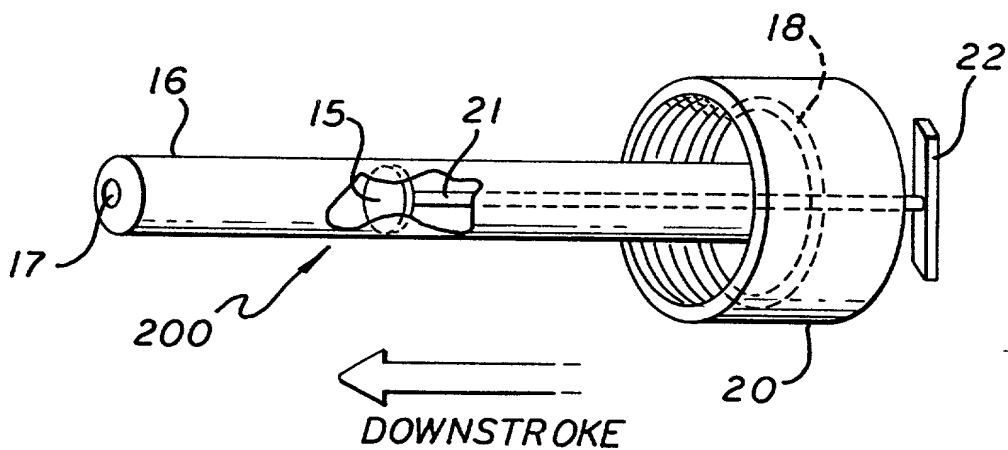
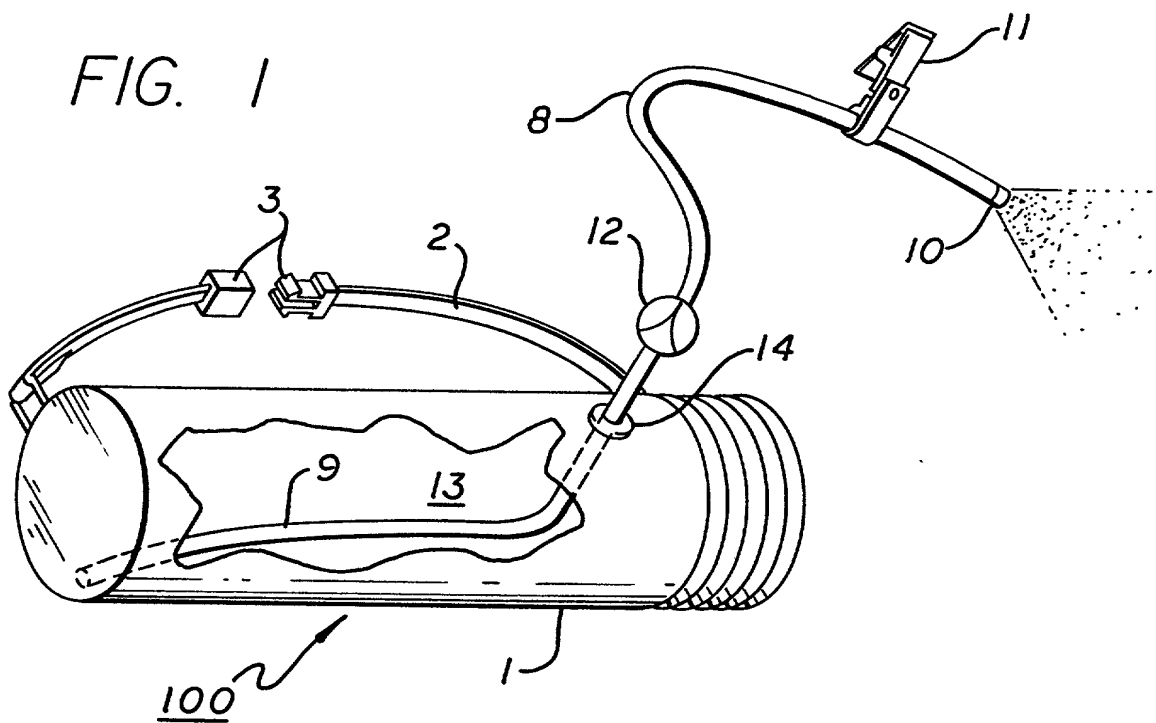


FIG. 2

SUBSTITUTE DECLARATION FOR PATENT APPLICATION

Docket Number (Optional)

MISTY-41920

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled PORTABLE MIST COOLING DEVICE, the specification of which

is attached hereto unless the following box is checked:

☒ was filed on 2/19/97 as United States Application Number or PCT International Application Number 08/802,072 and was amended on 8/4/97 (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

(Number)	(Country)	(Day/Month/Year Filed)

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

(Application Number)	(Filing Date)

(Application Number)	(Filing Date)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112,

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application Number)	(Filing Date)	Patented
<u>07/927,231</u>	<u>8/7/92</u>	

(Application Number)	(Filing Date)	(Status -- patented, pending, abandoned)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: James W. Paul, Reg. #29,967; David G. Parkhurst, Reg. #29,967; Thomas H. Mascher, Reg. #31,119; Thomas A. Runk Reg. #30,675 and Gilbert C. Kovelman, Reg. #19,552

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name) STEVEN M. UTTER

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Full name of second joint inventor, if any (given name, family name)

Second inventor's signature Date

Residence Citizenship

Post Office Address

☐ Additional inventors are being named on separately numbered sheets attached hereto.

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